DETAILED ACTION

The following is a non-final Office action in response to the Request for Continued Examination (RCE) received on 07/06/2010. Claims 1, 11, 13-18, 20, 21, and 23 have been amended, and Claim 6 has been canceled. Therefore, **Claims 1-5, 7-18, 20, 21, and 23** are pending and have been considered as follows.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/06/2010 has been entered.

Response to Arguments

2. **As to Claims 1-5, 7-18, 20, 21, and 23**, Applicant's arguments filed 06/01/2010 with respect to amended independent Claims 1, 11, 13-18, 20, 21, and 23 regarding the added limitations "alteration of at least one unused element of ID data " and "while maintaining the pre-determined ID data" have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 was amended by Applicant to recite the limitation "at least one ***unused*** element of ID data" in line 6. Applicant stated on page 14 of the remarks filed 06/01/2010 that "Support for the amendment may be found at least in tables 2 and 3, wherein the modified (or altered ID data) is determined by altering an unused element (as represented by "xxxx," which is a standard terminology in computer design)". After review of Applicant's specification, the Examiner respectfully disagrees and finds the added limitation "unused element of ID data" to Claim 1 nowhere supported in the original disclosure filed on 08/16/2006. Regarding Tables 2 and 3, Applicant's specification recites (emphasis added) "In a subsequent process step 216, ***the ID data segment of data segments comprising audio data is modified*** by the packet identifier unit 106. ***In this way, the audio packets are not recognised as such by a playback apparatus such as a legacy DVD player***" [Page 8 lines 5-8] and "***When no audio data is recognised because the proper stream_id is not found, no audio will be played back*** and only decrypted video will be played back. This is not very interesting to watch, but does not harm the legacy DVD-player. ***Inventors propose modification of the stream_id and sub stream_id values as shown in Table 3***. As a person skilled in the art will appreciate, modifications of this scheme are possible" [Page 8 lines 17-22]. As Table 3 illustrates, modification of the original "stream_id" element

"0xxx" (which Applicant equates as "an unused element") to the modified stream_id value of "1xxx" in fact causes the MPEG audio packets to not be recognised by a playback apparatus such as a legacy DVD player (specification Page 8 lines 5-8 and 17-22). This stream_id element which Applicant relies upon in the specification to support the amended limitation "unused element" in amended Claim 1 is in fact a "***used*** element" because its proposed modification will result in "the proper stream_id is not found" and "no audio will be played back" by a playback apparatus such as a legacy DVD player (as disclosed in Applicant's specification page 8 lines 5-8 and 17-22]. Therefore, the amended limitation "unused element" constitutes new matter that is not supported by Applicant's originally filed disclosure, and amended Claim 1 is rejected under 35 U.S.C. 112, first paragraph.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 18 and 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to amended independent Claims 18 and 21, both claims at line 1 recite "Computer programme product comprising computer readable instruction…", resulting in the claimed invention being software per se which is not within one of the four categories (i.e. process, machine, article of manufacture, or composition of matter) that define the explicit scope and reach of subject matter patentable under 35 U.S.C. §101. Because Claims 18 and 21, as properly read in light of the disclosure, encompass non-

statutory subject matter (i.e. software instructions), Claims 18 and 21 are rejected under 35 U.S.C. §101 for reciting non-patentable subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 1-5, 7, 8, 10-18, 20, 21, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (US-20010042252-A1, hereinafter Yamaguchi) in view of Hiroshima et al. (US-5801781-A, hereinafter Hiroshima), and in further view of Raike (US-20020025045-A1).

As to Amended Claim 1:

Yamaguchi discloses a method of encrypting a data stream comprising at least one stream of audiovisual data (e.g. see "the present invention aims to provide a digital

broadcast receiving device, a digital broadcast system, and a recording medium storing a receiving method and a receiving program, all of which can restrict use of interactive data relating to a fee-based program during a preview time" [0015]), comprising steps of,

- segmenting at least one of said at least one stream (MPEG2 transport stream [0063]) of audiovisual data into data segments (components [0066]) (e.g. see "The sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30… The reception signal is composed of video data, audio data, interactive data" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel. Each packet contains a different packet ID (PID), which is identification information for the packet" [0065]);
- providing the data segments with ID data (component ID [0066]) in an ID segment (MPEG2 TS 200 packet headers [0065]-[0066]), the ID data being [different from] ID data being pre-determined (packet id, PID [0065]) to identify the type of data (audio, video, or interactive data [0063]) in the stream of audiovisual data (e.g. see "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure. Each component contains a different component ID that identifies the component" [0066]; see also "The component 217 includes viewing permission information 218, which contains subscription information given for each

program... Video data and audio data are included in a video data component and an audio data component, which are not shown in the figure" [0067]; see also "Each reception element has a different reception element ID to identify the reception element, and each presentation element has a different presentation ID to identify the presentation element" [0070]);

But Yamaguchi does not specifically disclose:

- an alteration of at least one unused element of ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data;
- partly encrypting the data segments, leaving the ID segment unencrypted (although Yamaguchi does disclose "Encryption (hereafter, "scrambling") is performed separately for each TP (hereafter, "AV (audio-video) TP" [Transport Packets]) containing video data and audio data for programs" [0008]).

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an alteration of at least one unused element of ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) such that the altered ID data renders the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) in the at least one stream unrecognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) while maintaining the pre-determined ID data (i.e. TS header structure including parameters is maintained [column 13 lines 11-50]).

Furthermore, the analogous art Raike, which addresses the same field of endeavor in

encryption and transmission of audio and video data packet streams, does disclose partly encrypting the data segments (encrypting packet payload [0035]), leaving the ID segment (packet header information with ID tag [0029] and [0035]) unencrypted.

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);
- (e.g. see Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces

> the data payload of each packet with encrypted data. All of the packets in the stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]; see also "each packet header is assumed to include at least one item of information that uniquely identifies that packet, called here a "tag"... The tag information, along with the rest of the packet header, must accompany a packet "in the clear", that is, not encrypted" [0029]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an alteration of at least one unused element of ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data and partly encrypting the data segments, leaving the ID segment unencrypted as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the encryption and decryption of the data packets (Raike [0032]-[0035]).

As to Claim 2:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 1, wherein the method further comprises the step of,

- creating data packs (components, Yamaguchi [0066]), each data pack comprising at least one data segment (packets [0065]) and wherein the step of partly encrypting the data segments, the ID segment (packet header information with ID tag, Raike [0029] and [0035]) of said at least one data segment is unencrypted (e.g. see Yamaguchi, "A plurality of packets that has the same PID to be transmitted make up the same component" [0065]; see also "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure" [0066]; see also Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces the data payload of each packet with encrypted data. All of the packets in the stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]);
- The examiner supplies the same rationale for the combination of references Yamaguchi, Hiroshima, and Raike as in claim 1 above.

As to Claim 3:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 1, wherein the at least one data stream comprises multiple streams of different types of audiovisual data and data segments of at least one stream of audiovisual data are

encrypted (e.g. see Yamaguchi, "For this communication satellite broadcast service, a plurality of transport streams (hereafter called "TS") for digital data are broadcasted in parallel. The number of transport streams broadcasted in parallel is equal to a number of transponders. A plurality of transport packets (hereafter "TP"), which contain data corresponding to a plurality of programs, are time-division multiplexed into each TS. A user selects a given program contained in a TS, and watches the program" [0006]; see also "Encryption (hereafter, "scrambling") is performed separately for each TP (hereafter, "AV (audio-video) TP") containing video data and audio data for programs" [0008]).

As to Claim 4:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 3, wherein data segments of at least one stream of audiovisual data is provided with ID segments (MPEG2 TS 200 packet headers, Yamaguchi [0065]-[0066]) comprising ID data (component ID [0066]) being different from ID data being pre-determined to identify the type of data in the stream of audiovisual data (e.g. see Yamaguchi, "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure. Each component contains a different component ID that identifies the component" [0066]; see also "The component 217 includes viewing permission information 218, which contains subscription information given for each program... Video data and audio data are included in a video data component and an audio data component, which are not shown in the figure" [0067]).

As to Claim 5:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 3, wherein the multiple streams of different types of audiovisual data are provided simultaneously and the method further comprising the step of multiplexing the segments comprising data of the multiple streams of audiovisual data to a further data stream (e.g. see Yamaguchi, "A plurality of transport packets (hereafter "TP"), which contain data corresponding to a plurality of programs, are time-division multiplexed into each TS. A user selects a given program contained in a TS, and watches the program" [0006]; see also "The combining unit 106 receives the second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100" [0108]).

As to Claim 7:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 2, wherein the data packs are MPEG-2 data stream packs (e.g. see Yamaguchi, "The sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel" [0065]).

As to Claim 8:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 1, wherein the ID data being pre-determined to identify the type of data in the stream of audiovisual data is pre-determined by the DVD standard (e.g. see Yamaguchi, "The sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel. Each packet contains a different packet ID (PID), which is identification information for the packet" [0065] where the DVD standard inherently uses the MPEG2 format in its specification).

As to Claim 10:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 1, further comprising,

- storing the segmented and partially encrypted data segments on a storage medium (e.g. see Yamaguchi, "In view of the above problems, the present invention aims to provide a digital broadcast receiving device, a digital broadcast system, and a recording medium storing a receiving method and a receiving program, all of which can restrict use of interactive data relating to a fee-based program during a preview time" [0015]; see also "The data storing unit 108 is composed of semiconductor memory, and has areas that store a presentation element, a purchase state, a component ID, a reception element ID, and a presenting element flag, as shown in FIG. 5" [0088]).

As to Amended Claim 11:

Yamaguchi discloses a circuit (sending device 20 [0061]) for encrypting a data stream comprising at least one stream of audiovisual data, comprising (see Applicant Spec. Page 11 lines 8-9, "For example, a function being described as being carried out by one element may also be carried out by multiple elements and vice versa [multiple functions carried out by one element]"),

- a segmenting unit (sending device 20's processor) for segmenting the stream of audiovisual data in data segments (e.g. see "The sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel" [0065] where sending device 20 inherently uses a processor for these functions);
- a unit (sending device 20's processor) for providing the data segment with ID data (component ID [0066]) in an ID segment (MPEG2 TS 200 packet headers [0065]-[0066]), the ID data [different from] ID data (packet id, PID [0065]) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure. Each component contains a different component ID that identifies the component" [0066]; see also "The component 217 includes viewing permission information 218, which contains subscription information given for each program... Video

data and audio data are included in a video data component and an audio data component, which are not shown in the figure" [0067]);

But Yamaguchi does not specifically disclose:

- an alteration of at least one element of ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data;
- an encryption unit for partly encrypting the data segments, leaving the ID segment unencrypted (although Yamaguchi does disclose "Encryption (hereafter, "scrambling") is performed separately for each TP (hereafter, "AV (audio-video) TP" [Transport Packets]) containing video data and audio data for programs" [0008]).

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an alteration of at least one element of ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) such that the altered ID data renders the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) in the at least one stream unrecognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) while maintaining the pre-determined ID data (i.e. TS header structure including parameters is maintained [column 13 lines 11-50]).

Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose an encryption unit (sender's encryption processor [0005]) for partly encrypting the data

segments (encrypting packet payload [0035]), leaving the ID segment (packet header information with ID tag [0029] and [0035]) unencrypted.

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);
- (e.g. see Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces the data payload of each packet with encrypted data. All of the packets in the

stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]; see also “each packet header is assumed to include at least one item of information that uniquely identifies that packet, called here a "tag"... The tag information, along with the rest of the packet header, must accompany a packet "in the clear", that is, not encrypted” [0029]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an alteration of at least one element of ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data and an encryption unit for partly encrypting the data segments, leaving the ID segment unencrypted as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the encryption and decryption of the data packets (Raike [0032]-[0035]).

As to Claim 12:

Yamaguchi in view of Hiroshima and Raike discloses the circuit according to claim 11, further comprising a packing unit (sending device 20's processor) for creating data packs (components, Yamaguchi [0066]), each data pack comprising at least one data segment (packets [0065]) and wherein the step of partly encrypting the data segments, the ID segment (packet header information with ID tag, Raike [0029] and [0035]) of said at least one data segment is unencrypted (e.g. see Yamaguchi, "A plurality of packets that has the same PID to be transmitted make up the same component" [0065]; see also "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure" [0066]; see also Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces the data payload of each packet with encrypted data. All of the packets in the stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]). The Examiner supplies the same rationale for the combination of references Yamaguchi, Hiroshima, and Raike as in claim 11 above.

As to Amended Claim 13:

Yamaguchi discloses an apparatus (FIG. 1, interactive data receiving devices 100a and 100b) for storing data, comprising,

- a receiver for receiving data (e.g. see "As shown in FIG. 4, the interactive data receiving device 100 includes a receiving unit 101" [0086]);
- the circuit comprising:

- a segmenting unit (sending device 20's processor) for segmenting the stream of audiovisual data in data segments (e.g. see "The sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel" [0065] where sending device 20 inherently uses a processor for these functions);
- a unit (sending device 20's processor) for providing the data segment with ID data (component ID [0066]) in an ID segment (MPEG2 TS 200 packet headers [0065]-[0066]), the ID data [different from] ID data (packet id, PID [0065]) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure. Each component contains a different component ID that identifies the component" [0066]; see also "The component 217 includes viewing permission information 218, which contains subscription information given for each program... Video data and audio data are included in a video data component and an audio data component, which are not shown in the figure" [0067]);
- a storage device (data storing unit) for storing partially encrypted data segments on a storage medium (e.g. see "The data storing unit 108 is composed of semiconductor memory, and has areas that store a presentation element, a

purchase state, a component ID, a reception element ID, and a presenting element flag, as shown in FIG. 5" [0088]);

But Yamaguchi does not specifically disclose:

- an alteration of at least one element of ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data;
- an encryption unit for partly encrypting the data segments, leaving the ID segment unencrypted (although Yamaguchi does disclose "Encryption (hereafter, "scrambling") is performed separately for each TP (hereafter, "AV (audio-video) TP" [Transport Packets]) containing video data and audio data for programs" [0008]).

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an alteration of at least one element of ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) such that the altered ID data renders the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) in the at least one stream unrecognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) while maintaining the pre-determined ID data (i.e. TS header structure including parameters is maintained [column 13 lines 11-50]).

Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose an encryption unit (sender's encryption processor [0005]) for partly encrypting the data

segments (encrypting packet payload [0035]), leaving the ID segment (packet header information with ID tag [0029] and [0035]) unencrypted.

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);
- (e.g. see Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces the data payload of each packet with encrypted data. All of the packets in the

stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]; see also “each packet header is assumed to include at least one item of information that uniquely identifies that packet, called here a "tag"... The tag information, along with the rest of the packet header, must accompany a packet "in the clear", that is, not encrypted” [0029]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an alteration of at least one element of ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data and an encryption unit for partly encrypting the data segments, leaving the ID segment unencrypted as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the encryption and decryption of the data packets (Raike [0032]-[0035]).

As to Amended Claim 14:

Yamaguchi discloses a method of decrypting audiovisual data (e.g. see "the present invention aims to provide a digital broadcast receiving device, a digital broadcast system, and a recording medium storing a receiving method and a receiving program, all of which can restrict use of interactive data relating to a fee-based program during a preview time" [0015]), comprising the steps of,

- recognising that the data carried by the ID segment is [different from] ID data being pre-determined to identify a type of data in the stream of audiovisual data and recognising an actual type of data comprised by the data segments (e.g. see "The data judging unit 117 then compares the ID of the recognized link destination with the ID of the currently-presented presentation element to judge whether a presentation element of the link destination and the currently-presented presentation element belong to the same component" [0126]);
- forming a stream of audiovisual data from the data segments (e.g. see "The combining unit 106 receives the second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100" [0108]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration of ID data, wherein the type of data is unrecognized based on the altered ID data;
- decrypting the partly encrypted data segments (although Yamaguchi discloses "A descrambling key to descramble such scrambled AV TP [audio-video transport packets], and program attribute information for the programs make up program information (hereafter, "ECM") and are contained in another TP (hereafter, "ECM TP"). Such ECM TP and AV TP are broadcasted together. This ECM TP is also scrambled. A work key to descramble the scrambled ECM TP, and subscription information make up individual information (hereafter, "EMM") and are stored in an integrated circuit (IC) card, which is inserted into each receiving device" [0008]);

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration of ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) wherein the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) is unrecognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) based on the altered ID data (i.e. TS header parameter values are set [column 13 lines 11-50]). Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose decrypting (symmetrically decrypting [0034]) the partly encrypted data segments (encrypted stream packets with unencrypted tag values removed [0034]).

- (e.g. see Hiroshima, “FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio” [column 13 lines 11-50]);
- (e.g. see Raike, “The tag values of each stream data packet are extracted (13) and then hashed (14) with the base key to produce the packet key for each packet. The stream packets with tag values removed (stream data) are then symmetrically decrypted (15) using the corresponding packet key. The plaintext stream packets, with or without tag values depending on the transmission

protocol being used, are then stored or outputted in a form suitable for use by a streaming media player" [0034]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration of ID data, wherein the type of data is unrecognized based on the altered ID data and decrypting the partly encrypted data segments as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the later decryption process of the encrypted stream packets (Raike [0032]-[0035]).

As to Amended Claim 15:

Yamaguchi discloses a method for decrypting audiovisual data (e.g. see "the present invention aims to provide a digital broadcast receiving device, a digital broadcast system, and a recording medium storing a receiving method and a receiving program, all of which can restrict use of interactive data relating to a fee-based program during a preview time" [0015]), comprising the steps of:

- retrieving data stored on a storage medium (e.g. see “The receiving unit 101 receives an MPEG2 TS (hereafter, "TS"), which is transmitted repeatedly from the sending device 20 as a broadcast wave, and extracts a reception signal and viewing permission information from the received TS. This reception signal contains video data, audio data, and interactive data. The receiving unit 101 then outputs the extracted reception signal to the restoring unit 103, and the extracted viewing permission information to the specifying unit 102” [0097]);
- recognizing that the data carried by the ID segment is [different from] ID data (data judging unit 117 distinguishes ID data such as a component ID from a packet ID) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see “The data judging unit 117 then compares the ID of the recognized link destination with the ID of the currently-presented presentation element to judge whether a presentation element of the link destination and the currently-presented presentation element belong to the same component" [0126]);
- forming a stream of audiovisual data from the data segments (e.g. see “The combining unit 106 receives the second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100” [0108]);

- rendering the decrypted stream of audiovisual data (e.g. see "When the purchase state signal indicates the preview state (step S301), the data analyzing unit 104 generates video data, which is a second data signal, referring to a bitmap table, a text table, and the like included in a firstly-presented presentation element (step S304), and outputs the generated second data signal to the combining unit 106 (step S305). The processing is then completed" [0207]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration of ID data and not recognising the type of data comprised by the data segments based on the altered ID data;
- decrypting the partly encrypted data segments (although Yamaguchi discloses "A descrambling key to descramble such scrambled AV TP [audio-video transport packets], and program attribute information for the programs make up program information (hereafter, "ECM") and are contained in another TP (hereafter, "ECM TP"). Such ECM TP and AV TP are broadcasted together. This ECM TP is also scrambled. A work key to descramble the scrambled ECM TP, and subscription information make up individual information (hereafter, "EMM") and are stored in an integrated circuit (IC) card, which is inserted into each receiving device" [0008]);

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) of ID data and not recognising the type of data (i.e. user data

[column 13 lines 11-50]; FIG. 19B) comprised by the data segments based on the altered ID data (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]). Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose decrypting (symmetrically decrypting [0034]) the partly encrypted data segments (encrypted stream packets with unencrypted tag values removed [0034]).

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored

and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);

- (e.g. see Raike, "The tag values of each stream data packet are extracted (13) and then hashed (14) with the base key to produce the packet key for each packet. The stream packets with tag values removed (stream data) are then symmetrically decrypted (15) using the corresponding packet key. The plaintext stream packets, with or without tag values depending on the transmission protocol being used, are then stored or outputted in a form suitable for use by a streaming media player" [0034]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration of ID data and not recognising the type of data comprised by the data segments based on the altered ID data and decrypting the partly encrypted data segments as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and

facilitating the later decryption process of the encrypted stream packets (Raike [0032]-[0035]).

As to Amended Claim 16:

Yamaguchi discloses a circuit for decrypting audiovisual data (e.g. see "the present invention aims to provide a digital broadcast receiving device, a digital broadcast system, and a recording medium storing a receiving method and a receiving program, all of which can restrict use of interactive data relating to a fee-based program during a preview time" [0015]), comprising:

- an identification unit for recognizing that a data carried by an ID segment is [different from] ID data (i.e. data judging unit 117 distinguishes ID data such as a component ID from a packet ID [0126]) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see "The data judging unit 117 then compares the ID of the recognized link destination with the ID of the currently-presented presentation element to judge whether a presentation element of the link destination and the currently-presented presentation element belong to the same component" [0126]);
- a streaming unit (i.e. combining unit [0108]) for forming a stream of audiovisual data from the data segments (e.g. see "The combining unit 106 receives the second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined

signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100" [0108]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration of ID data and not recognising the type of data comprised by the data segments based on the altered ID data;
- a decryption unit for decrypting a partly encrypted data segments (although Yamaguchi discloses "A descrambling key to descramble such scrambled AV TP [audio-video transport packets], and program attribute information for the programs make up program information (hereafter, "ECM") and are contained in another TP (hereafter, "ECM TP"). Such ECM TP and AV TP are broadcasted together. This ECM TP is also scrambled. A work key to descramble the scrambled ECM TP, and subscription information make up individual information (hereafter, "EMM") and are stored in an integrated circuit (IC) card, which is inserted into each receiving device" [0008]);

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) of ID data and not recognising the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) comprised by the data segments based on the altered ID data (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]). Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video

data streams, does disclose a decryption unit (recipient's decryption processor [0030]) for decrypting (symmetrically decrypting [0034]) a partly encrypted data segments (encrypted stream packets with unencrypted tag values removed [0034]).

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);
- (e.g. see Raike, "The tag values of each stream data packet are extracted (13) and then hashed (14) with the base key to produce the packet key for each

packet. The stream packets with tag values removed (stream data) are then symmetrically decrypted (15) using the corresponding packet key. The plaintext stream packets, with or without tag values depending on the transmission protocol being used, are then stored or outputted in a form suitable for use by a streaming media player" [0034]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration of ID data and not recognising the type of data comprised by the data segments based on the altered ID data and decrypting a partly encrypted data segments as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the later decryption process of the encrypted stream packets (Raike [0032]-[0035]).

As to Amended Claim 17:

Yamaguchi discloses apparatus for rendering and retrieving audiovisual data (e.g. see "the present invention aims to provide a digital broadcast receiving device, a digital

broadcast system, and a recording medium storing a receiving method and a receiving program, all of which can restrict use of interactive data relating to a fee-based program during a preview time" [0015]), comprising:

- a storage device for retrieving data from a storage medium (e.g. see "The receiving unit 101 receives an MPEG2 TS (hereafter, "TS"), which is transmitted repeatedly from the sending device 20 as a broadcast wave, and extracts a reception signal and viewing permission information from the received TS. This reception signal contains video data, audio data, and interactive data. The receiving unit 101 then outputs the extracted reception signal to the restoring unit 103, and the extracted viewing permission information to the specifying unit 102" [0097]);
- the circuit comprising:
- an identification unit for recognizing that a data carried by an ID segment is [different from] ID data (i.e. data judging unit 117 distinguishes ID data such as a component ID from a packet ID [0126]) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see "The data judging unit 117 then compares the ID of the recognized link destination with the ID of the currently-presented presentation element to judge whether a presentation element of the link destination and the currently-presented presentation element belong to the same component" [0126]);
- a streaming unit (i.e. combining unit [0108]) for forming a stream of audiovisual data from the data segments (e.g. see "The combining unit 106 receives the

second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100" [0108]);

- a circuit for rendering the decrypted stream of audiovisual data (e.g. see "When the purchase state signal indicates the preview state (step S301), the data analyzing unit 104 generates video data, which is a second data signal, referring to a bitmap table, a text table, and the like included in a firstly-presented presentation element (step S304), and outputs the generated second data signal to the combining unit 106 (step S305). The processing is then completed" [0207]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration of ID data and not recognising the type of data comprised by the data segments based on the altered ID data;
- a decryption unit for decrypting a partly encrypted data segments (although Yamaguchi discloses "A descrambling key to descramble such scrambled AV TP [audio-video transport packets], and program attribute information for the programs make up program information (hereafter, "ECM") and are contained in another TP (hereafter, "ECM TP"). Such ECM TP and AV TP are broadcasted together. This ECM TP is also scrambled. A work key to descramble the scrambled ECM TP, and subscription information make up individual information

(hereafter, "EMM") and are stored in an integrated circuit (IC) card, which is inserted into each receiving device" [0008]);

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) of ID data and not recognising the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) comprised by the data segments based on the altered ID data (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]). Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose a decryption unit (recipient's decryption processor [0030]) for decrypting (symmetrically decrypting [0034]) a partly encrypted data segments (encrypted stream packets with unencrypted tag values removed [0034]).

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298

were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);

- (e.g. see Raike, "The tag values of each stream data packet are extracted (13) and then hashed (14) with the base key to produce the packet key for each packet. The stream packets with tag values removed (stream data) are then symmetrically decrypted (15) using the corresponding packet key. The plaintext stream packets, with or without tag values depending on the transmission protocol being used, are then stored or outputted in a form suitable for use by a streaming media player" [0034]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration of ID data and not recognising the type of data comprised by the data segments based on the altered ID data and a decryption unit for decrypting a partly encrypted data segments as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header

parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the later decryption process of the encrypted stream packets (Raike [0032]-[0035]).

As to Amended Claim 18:

Yamaguchi discloses a computer programme product (i.e. computer system memory [0258]) comprising computer readable instruction (i.e. computer program [0258]) for programming a processing unit (i.e. microprocessor [0258]) (e.g. see "The present invention may be a computer system that comprises a microprocessor and memory which stores the above computer program, and the microprocessor may execute the stored computer program to achieve the present invention. The above computer program or digital signals may be recorded on the computer-readable recording medium to be distributed via the network or other distribution methods to a computer system" [0258]) to execute the steps of:

- segmenting at least one of said at least one stream (MPEG2 transport stream [0063]) of audiovisual data in data segments (components [0066]) (e.g. see "The sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30… The

reception signal is composed of video data, audio data, interactive data" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel. Each packet contains a different packet ID (PID), which is identification information for the packet" [0065]);

- providing the data segments with ID data (component ID [0066]) in an ID segment (MPEG2 TS 200 packet headers [0065]-[0066]), the ID data being [different from] ID data being pre-determined (packet id, PID [0065]) to identify a type of data (audio, video, or interactive data [0063]) in the stream of audiovisual data (e.g. see "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure. Each component contains a different component ID that identifies the component" [0066]; see also "The component 217 includes viewing permission information 218, which contains subscription information given for each program... Video data and audio data are included in a video data component and an audio data component, which are not shown in the figure" [0067]; see also "Each reception element has a different reception element ID to identify the reception element, and each presentation element has a different presentation ID to identify the presentation element" [0070]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data;

- partly encrypting the data segments, leaving the ID segment unencrypted (although Yamaguchi does disclose “Encryption (hereafter, "scrambling") is performed separately for each TP (hereafter, "AV (audio-video) TP" [Transport Packets]) containing video data and audio data for programs” [0008]).

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) such that the altered ID data renders the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) in the at least one stream unrecognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) while maintaining the pre-determined ID data (i.e. TS header structure including parameters is maintained [column 13 lines 11-50]). Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data packet streams, does disclose partly encrypting the data segments (encrypting packet payload [0035]), leaving the ID segment (packet header information with ID tag [0029] and [0035]) unencrypted.

- (e.g. see Hiroshima, “FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For

example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);

- (e.g. see Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces the data payload of each packet with encrypted data. All of the packets in the stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]; see also "each packet header is assumed to include at least one item of information that uniquely identifies that packet, called here a "tag"... The tag information, along with the rest of the packet header, must accompany a packet "in the clear", that is, not encrypted" [0029]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of

Hiroshima and Raike to include an at least one element alteration ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data and partly encrypting the data segments, leaving the ID segment unencrypted as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the encryption and decryption of the data packets (Raike [0032]-[0035]).

As to Amended Claim 20:

Yamaguchi discloses a programmed computer (i.e. computer system [0258]) (e.g. see "The present invention may be a computer system that comprises a microprocessor and memory which stores the above computer program, and the microprocessor may execute the stored computer program to achieve the present invention. The above computer program or digital signals may be recorded on the computer-readable recording medium to be distributed via the network or other distribution methods to a computer system" [0258]) enabled to execute the steps of:

- segmenting at least one of said at least one stream (MPEG2 transport stream [0063]) of audiovisual data in data segments (components [0066]) (e.g. see "The

sending device 20 is installed in a broadcast station that provides a digital broadcast service, and sends an MPEG2 (Moving Picture Expert Group) TP (transport stream) as a broadcast wave via the broadcast satellite 30… The reception signal is composed of video data, audio data, interactive data" [0063]; see also "When transmitted, the MPEG2 TS 200 is divided into packets on a transmission channel. Each packet contains a different packet ID (PID), which is identification information for the packet" [0065]);

- providing the data segments with ID data (component ID [0066]) in an ID segment (MPEG2 TS 200 packet headers [0065]-[0066]), the ID data being [different from] ID data being pre-determined (packet id, PID [0065]) to identify a type of data (audio, video, or interactive data [0063]) in the stream of audiovisual data (e.g. see "As shown in FIG. 2, the MPEG2 TS 200 includes components 217, 219, 201, 204, and other components that are not shown in the figure. Each component contains a different component ID that identifies the component" [0066]; see also "The component 217 includes viewing permission information 218, which contains subscription information given for each program... Video data and audio data are included in a video data component and an audio data component, which are not shown in the figure" [0067]; see also "Each reception element has a different reception element ID to identify the reception element, and each presentation element has a different presentation ID to identify the presentation element" [0070]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data;
- partly encrypting the data segments, leaving the ID segment unencrypted (although Yamaguchi does disclose “Encryption (hereafter, "scrambling") is performed separately for each TP (hereafter, "AV (audio-video) TP" [Transport Packets]) containing video data and audio data for programs” [0008]).

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) such that the altered ID data renders the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) in the at least one stream unrecognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) while maintaining the pre-determined ID data (i.e. TS header structure including parameters is maintained [column 13 lines 11-50]).

Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data packet streams, does disclose partly encrypting the data segments (encrypting packet payload [0035]), leaving the ID segment (packet header information with ID tag [0029] and [0035]) unencrypted.

- (e.g. see Hiroshima, “FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the

multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);

- (e.g. see Raike, "The present encryption processing may insert specific information into designated field(s) within the stream header, and also replaces the data payload of each packet with encrypted data. All of the packets in the stream are encrypted, but only the data payload is encrypted and not the packet header information. This remains unchanged by the encryption processing" [0035]; see also "each packet header is assumed to include at least one item of information that uniquely identifies that packet, called here a "tag"... The tag

information, along with the rest of the packet header, must accompany a packet "in the clear", that is, not encrypted" [0029]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration ID data such that the altered ID data renders the type of data in the at least one stream unrecognized while maintaining the pre-determined ID data and partly encrypting the data segments, leaving the ID segment unencrypted as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the encryption and decryption of the data packets (Raike [0032]-[0035]).

As to Amended Claim 21:

Yamaguchi discloses a computer programme product (i.e. computer system memory [0258]) comprising computer readable instruction (i.e. computer program [0258]) for programming a processing unit (i.e. microprocessor [0258]) (e.g. see "The present invention may be a computer system that comprises a microprocessor and memory which stores the above computer program, and the microprocessor may execute the

stored computer program to achieve the present invention. The above computer program or digital signals may be recorded on the computer-readable recording medium to be distributed via the network or other distribution methods to a computer system" [0258]) for executing the steps of:

- recognising that the data carried by the ID segment is [different from] ID data (i.e. data judging unit 117 distinguishes ID data such as a component ID from a packet ID [0126]) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see "The data judging unit 117 then compares the ID of the recognized link destination with the ID of the currently-presented presentation element to judge whether a presentation element of the link destination and the currently-presented presentation element belong to the same component" [0126]);
- forming a stream of audiovisual data from the data segments (e.g. see "The combining unit 106 receives the second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100" [0108]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration of ID data and the type of data comprised by the data segments is not recognized based on the altered ID data;

- decrypting the partly encrypted data segments (although Yamaguchi discloses "A descrambling key to descramble such scrambled AV TP [audio-video transport packets], and program attribute information for the programs make up program information (hereafter, "ECM") and are contained in another TP (hereafter, "ECM TP"). Such ECM TP and AV TP are broadcasted together. This ECM TP is also scrambled. A work key to descramble the scrambled ECM TP, and subscription information make up individual information (hereafter, "EMM") and are stored in an integrated circuit (IC) card, which is inserted into each receiving device" [0008]);

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration of ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) and the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) comprised by the data segments is not recognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) based on the altered ID data. Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose decrypting (i.e. [0034]) the partly encrypted data segments (i.e. encrypted stream packets with unencrypted tag values removed [0034]).

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the

multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);

- (e.g. see Raike, "The tag values of each stream data packet are extracted (13) and then hashed (14) with the base key to produce the packet key for each packet. The stream packets with tag values removed (stream data) are then symmetrically decrypted (15) using the corresponding packet key. The plaintext stream packets, with or without tag values depending on the transmission protocol being used, are then stored or outputted in a form suitable for use by a streaming media player" [0034]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration of ID data and the type of data comprised by the data segments is not recognized based on the altered ID data and decrypting the partly encrypted data segments as claimed because the use of Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the later decryption process of the encrypted stream packets (Raike [0032]-[0035]).

As to Amended Claim 23:

Yamaguchi discloses a programmed computer (i.e. computer system [0258]) (e.g. see "The present invention may be a computer system that comprises a microprocessor and memory which stores the above computer program, and the microprocessor may execute the stored computer program to achieve the present invention. The above computer program or digital signals may be recorded on the computer-readable recording medium to be distributed via the network or other distribution methods to a computer system" [0258]) enabled to execute the method of:

- recognising that the data carried by the ID segment is [different from] ID data (i.e. data judging unit 117 distinguishes ID data such as a component ID from a packet ID [0126]) being pre-determined to identify a type of data in the stream of audiovisual data (e.g. see "The data judging unit 117 then compares the ID of the recognized link destination with the ID of the currently-presented presentation element to judge whether a presentation element of the link destination and the currently-presented presentation element belong to the same component" [0126]);
- forming a stream of audiovisual data from the data segments (e.g. see "The combining unit 106 receives the second AV signal from the AV reproducing unit 105, and a second data signal from the data analyzing unit 104. The combining unit 106 then combines the second AV signal and the second data signal to generate a data-AV combined signal, and outputs the generated data-AV combined signal to the monitor connected to the interactive data receiving device 100" [0108]);

But Yamaguchi does not specifically disclose:

- an at least one element alteration of ID data and the type of data comprised by the data segments is not recognized based on the altered ID data;
- decrypting the partly encrypted data segments (although Yamaguchi discloses "A descrambling key to descramble such scrambled AV TP [audio-video transport packets], and program attribute information for the programs make up program information (hereafter, "ECM") and are contained in another TP (hereafter, "ECM

TP"). Such ECM TP and AV TP are broadcasted together. This ECM TP is also scrambled. A work key to descramble the scrambled ECM TP, and subscription information make up individual information (hereafter, "EMM") and are stored in an integrated circuit (IC) card, which is inserted into each receiving device" [0008]);

However, the analogous art Hiroshima, which addresses the same field of endeavor in multiplexing transport audio and video data packet streams, does disclose an at least one element alteration of ID data (i.e. setting modified TS header parameters including packet ID [column 13 lines 11-50]) and the type of data (i.e. user data [column 13 lines 11-50]; FIG. 19B) comprised by the data segments is not recognized (i.e. TS packet is viewed as invalid and ignored by MPEG2 standard decoders [column 13 lines 11-50]) based on the altered ID data. Furthermore, the analogous art Raike, which addresses the same field of endeavor in encryption and transmission of audio and video data streams, does disclose decrypting (i.e. [0034]) the partly encrypted data segments (i.e. encrypted stream packets with unencrypted tag values removed [0034]).

- (e.g. see Hiroshima, "FIGS. 19A and 19B show the converting processes in FIG. 18. The MPEG2-PES packets 82 which were separated to video and audio by the demultiplexer 48 are converted to the MPEG2-TS 264 in FIG. 19B by the multiplexer 34 in a manner similar to the case in mode 2 of FIG. 17... Subsequent to the setting of the parameters for the invalid packets of the TS header 298, the head one byte of the payload 300 of 184 bytes is set to a user flag 324. For example, "0x01" is used as a user flag 324. Subsequently, user data 326 is

inserted. In such an invalid TS packet 296 having the TS header 298 and payload 300, after the above-mentioned parameters I to III of the TS header 298 were confirmed by the decoder, the user flag 324 of the head one byte in the payload 300 is confirmed. When the user flag "0x01" is confirmed, it is known that the remaining 183 bytes are the user data 326, so that the user data 326 as user data which is not based on MPEG2 can be subjected to a proper process. Since the TS packet 296 is the invalid packet from a view point of the MPEG2 standard, all of the user flag 324 and user data 326 in the payload are ignored and no influence is exerted on the decoding of video and audio" [column 13 lines 11-50]);

- (e.g. see Raike, "The tag values of each stream data packet are extracted (13) and then hashed (14) with the base key to produce the packet key for each packet. The stream packets with tag values removed (stream data) are then symmetrically decrypted (15) using the corresponding packet key. The plaintext stream packets, with or without tag values depending on the transmission protocol being used, are then stored or outputted in a form suitable for use by a streaming media player" [0034]).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to modify the invention of Yamaguchi with the teachings of Hiroshima and Raike to include an at least one element alteration of ID data and the type of data comprised by the data segments is not recognized based on the altered ID data and decrypting the partly encrypted data segments as claimed because the use of

Hiroshima and Raike could provide Yamaguchi the ability to partially encrypt an audio and video data stream (Yamaguchi [0008]) and set TS header parameters such as PID values for certain data packet streams as invalid (Hiroshima [column 13 lines 11-50]) while not encrypting the packet header segments containing the ID information (Raike [0029]) for the purposes of allowing conversion of transport stream packets through parameter header settings where certain types of data packets can be ignored and exert no influence on the decoding process (Hiroshima [column 13 lines 11-50]) and facilitating the later decryption process of the encrypted stream packets (Raike [0032]-[0035]).

10. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Hiroshima and Raike, as applied to claim 1 above, and in further view of Nakagawa et al. (US-20010028725-A1, hereinafter Nakagawa).

As to Claim 9:

Yamaguchi in view of Hiroshima and Raike discloses the method according to claim 1, but does not specifically disclose:

- providing an empty stream of audiovisual data of the same type as the at least one stream of audiovisual data for which non pre-determined ID data has been provided, the empty stream of audiovisual data being provided with ID data pre-determined for identifying the type of data.

However, Nakagawa does disclose providing an empty stream (If IPMPS_Type=2, payload of decoded data is cleared) of audiovisual data of the same type as the at least one stream of audiovisual data for which non pre-determined ID data has been

provided, the empty stream of audiovisual data being provided with ID data (IPMP_Type) pre-determined for identifying the type of data.

- (e.g. see "On the other hand, if it is determined in step S307 that the user is not authentic (the user has not paid a given fee), the flow advances to step S308 to control playback quality of that object. In step S308, data decoded in step S305 is processed to control playback quality. How to process the data can be determined by the IPMP controller 20 depending on the format of the IPMP information" [0327]; see also "If IPMPS_Type=2, the payload of decoded data is cleared to black out a moving image or inhibit audio playback" [0330]; see also "As described above, according to this embodiment, upon decoding and playing back information from a data stream that contains a plurality of object streams, the playback quality of copyrighted objects can be controlled" [0334])

One of ordinary skill in the art at the time applicant's invention was made would have been motivated by Nakagawa to modify the combination method of Yamaguchi, Hiroshima, and Raike to include providing an empty stream of audiovisual data of the same type as the at least one stream of audiovisual data for which non pre-determined ID data has been provided, the empty stream of audiovisual data being provided with ID data pre-determined for identifying the type of data as claimed because the use of Nakagawa could provide the combination method of Yamaguchi, Hiroshima, and Raike the ability to provide an empty stream of audiovisual data (Nakagawa [0330]) of the same type as another audiovisual data stream for which non pre-determined ID data has been provided, for the purpose of enhancing control over output data streams

gained by being able to provide for an empty stream of audiovisual data for inhibiting audio or image playback to an unauthorized viewer (Nakagawa [0011]).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Candelore et al. (US-20030174837-A1) is cited for teaching a packet identifier mapping system that maps data streams to PID values.

b. Kuno et al. (US-20040109671-A1) is cited for teaching an audio video MPEG transport system that rewrites PID of transport packets.

c. Kochale (US-20050105896-A1) is cited for teaching an MPEG data stream system that uses table identifiers such as stream_id values.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH CHANG whose telephone number is (571)270-7530. The examiner can normally be reached on Monday-Friday 10:30am-7:30pm (Alt. Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi T. Arani can be reached on 571-272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. C./
Examiner, Art Unit 2438
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